

# JASON J. EVANS

Bioinformatics Engineering and Data Science

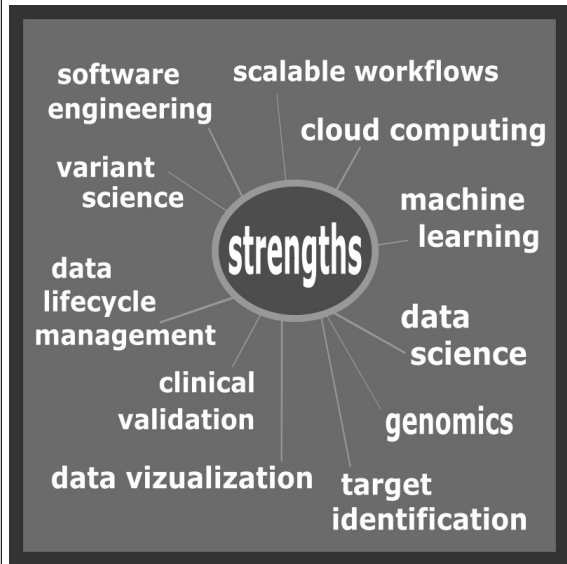
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## Highlights



- Established and managed a highly-effective clinical bioinformatics group developing and supporting diverse systems with diverse data
- Wide breadth of experience both contributing and leading development of extensible, scalable software integrating big data with varied, complex data sets
- Deep expertise dedicated to bioinformatics research and engineering towards analysis, assay development, validation and clinical operations for diagnostic genetic testing
- Designed and implemented containerized cloud pipelines and supporting systems integrated into full end-to-end workflows
- Effective in the analysis and visualization of data. I have significant ability to manage, transform, and distill data sets
- I communicate in a way that makes technical concepts digestable to a variety of audiences

## Education

**University of Wisconsin-Madison**

*Bachelors of Science, Botany*

**Madison, WI**

*1999*

**Medical College of Wisconsin and Marquette University**

*Masters of Science, Joint Program in Bioinformatics*

**Milwaukee, WI**

*2009*

## Experience

**Quest Diagnostics**

**Marlborough, MA**

*Sr. Staff Scientist/Sr. Manager, Bioinformatics*

*1/2018-Current*

- Established and managed a highly skilled, high-functioning clinical bioinformatics group in development and in support of geneticists, variant scientists and lab operations as part of a highly-regulated genetic testing laboratory
- Led and contributed to extensible, scalable software integrating core analyses with all systems required in our end-to-end sample processing workflow
- Dedicated research and engineering towards primary analysis, assay development, validation and clinical operations

Projects developed from initial research through implementation, validation, and in clinical operations:

- Built first-in-kind long-read sequencing assay for quantification of tandem repeats using a CRISPR/Cas9 no-amp cleavage
- Extensive development of containerized, cloud-based high-throughput analysis pipelines and integrating systems for large scale, consumer-based assay processing 100,000 samples over a year
- Performed key analyses contributing to actionable insights and algorithms applied to complex data sets in support of multiple labs with varied workflows
- Led development for high volume cloud-based systems and the tools to register and find data, track provenance, and ease troubleshooting of cloud pipelines and supporting systems
- Drove extensible implementation of group's Python libraries to standardize logging, tracking, and connection between LIMS, cloud-based systems and interpretation and reporting databases
- Fostered extensibility and simplicity in all of the systems used in our production clinical setting

**Courtagen Life Sciences**

**Woburn, MA**

*Clinical Bioinformatics Scientist, Annotation & Interpretation*

*11/2015-7/2017*

- Supported and implemented of interpretation and reporting full stack web applications providing feature improvements and Lifecycle Management in a CAP/CLIA genetic testing environment
- Built web interfaces and backends to identify and queue confirmatory analysis for diagnostic purposes

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## Experience (con'd)

### Laboratory of Molecular Medicine/Partners Personalized Medicine

Cambridge, MA

#### *Clinical Bioinformatician*

9/2012-11/2015

- Produced end-to-end pipeline for distributed computation and variant calling for Whole Genome Sequencing in a CAP/CLIA genetic testing laboratory setting
- Implemented software to interface variant databases, variant annotation, and interpretation interfaces into a single, simple set of tools and resources

### Harvard School of Public Health, Bioinformatics Core

Boston, MA

#### *Bioinformatician*

7/2011-8/2012

- Provided bioinformatics analyses and reports in support of contracting labs throughout HSPS
- Extensive contribution of tools and workflows towards the HSPS fork of the Galaxy Project

### Marquette University, School of Biology

Milwaukee, WI

#### *Research Associate, Molecular Biology*

5/2007-1/2008

- Built molecular biology constructs for RNA Interference in *Chlamydomonas*

### Applied Biosystems

Foster City, CA

#### *Bioinformatics Scientist, Research & Development*

5/2001-5/2005

- Built the computational analysis and system to run it in support of SNPlex custom oligo array
- Assisted in development of the first ABI 7900 high-throughput qPCR platform. Provided continued improvements in basecalling for the ABI 3700 sequencing instrument
- Leveraged the Celera human genome draft to identify putative drug targets in collaboration with contracted pharmaceutical companies

### Celera Genomics

Foster City, CA

#### *Scientist*

5/2000-5/2001

- Wet lab identification of full-length cDNA clones targeting putative drug targets
- cDNA library archival in a high-throughput cloning laboratory focused on isolating drug targets identified by draft genome

## Publications

Tsai, E.A.; Shakbatyan, R.; Evans, J.; Rossetti, P.; Graham, C.; Sharma, H.; Lin, C.-F.; Lebo, M.S. **Bioinformatics Workflow for Clinical Whole Genome Sequencing at Partners HealthCare Personalized Medicine**. J. Pers. Med. 2016, 6, 12.

## Technical Skills

**Sequencing:** PacBio Long-read, NGS Whole Exome, Whole Genome

**Stats & Data Science:** R, Bioconductor  
ggplot2/dplyr/tidyverse, Pandas, Plotly

**Machine Learning:** scikit-learn, PyTorch

**Languages:** Python, Ruby, Java, Javascript, CSS, SQL

**AWS:** S3, API Gateway, IAM, ECR, Lambda, EC2, Batch

**Containerization:** Docker, Rancher

**Variant Calling:** Small, Copy Number, Structural, Tandem repeat variation

**Databases:** Relational, NoSQL, Document

**Regulatory:** College of American Pathology (CAP), CLIA

**Environments:** Conda, Jupyter

**Web Frameworks:** Flask, FastAPI, VueJS



### Cloud Computing

Extensive experience in containerization and processing in AWS



### Data Science

Exceptional at data extraction, analysis, and chart generation



### Genetics and Genomics

Deep understanding of genetics along with the genomic tools to use it



### Algorithm Development

Wide breadth in statistical analysis, machine learning, and software